

[0089] An integrated circuit has a metal layer that includes conductors to provide interconnectivity for components of the integrated circuit chip. The metal layer is divided into at least two sections, such that a first section has a preferred direction and the second section has a preferred wiring direction that is different from the first preferred direction. The first and second preferred directions on a single metal layer may consist of any direction. The metal layer may be divided into more than two sections, wherein each section has a preferred wiring direction. Wiring geometries for multi-level metal layers are also disclosed

Figures

IC (Top View)

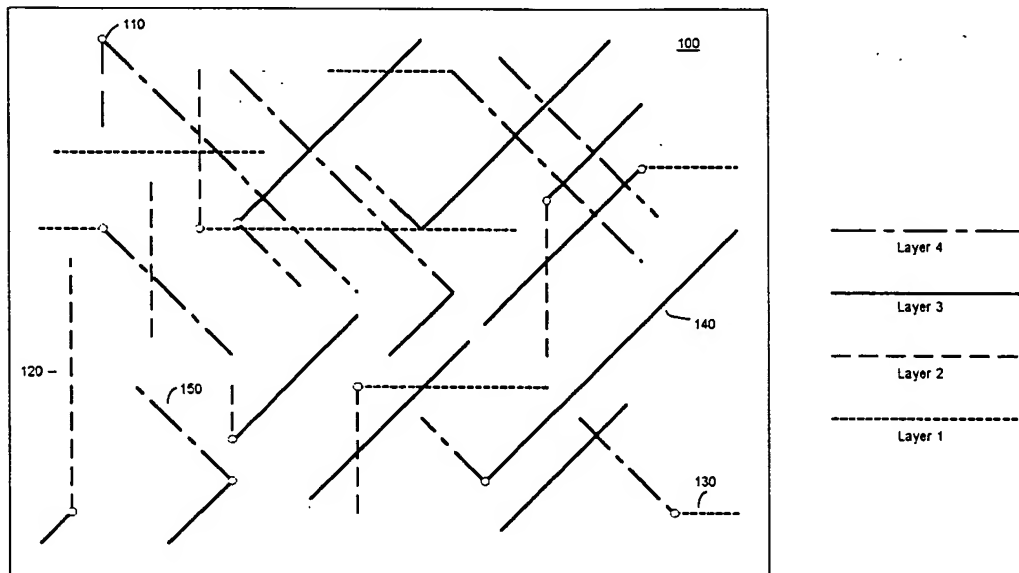


Figure 1a

IC (Top View)

155

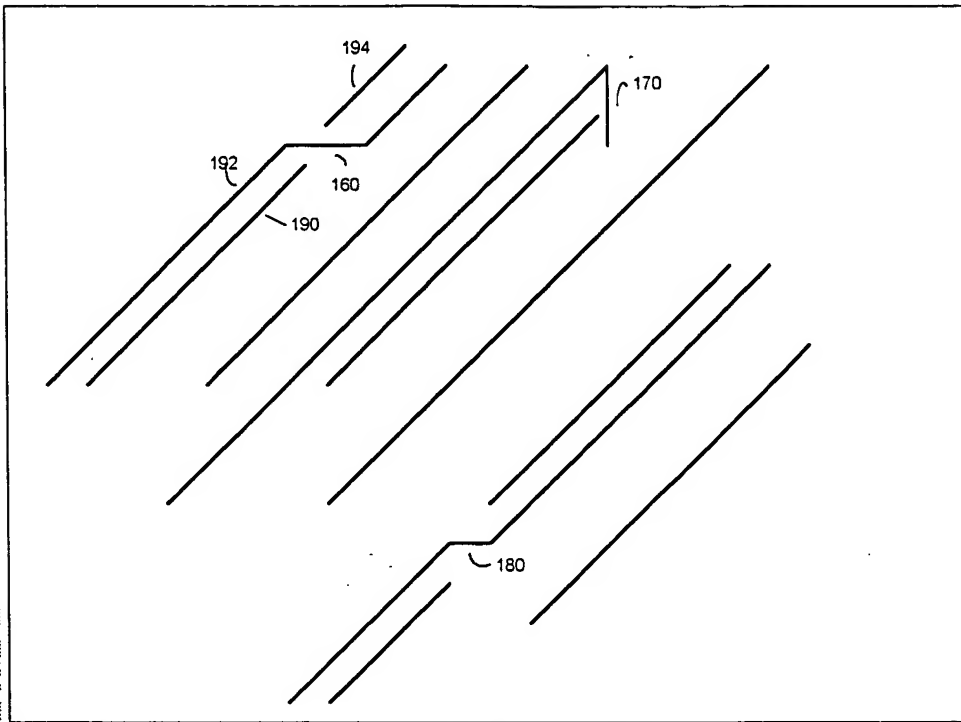
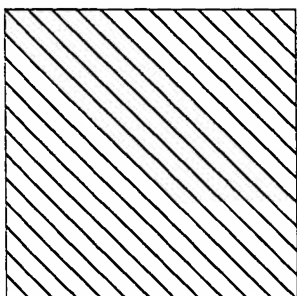
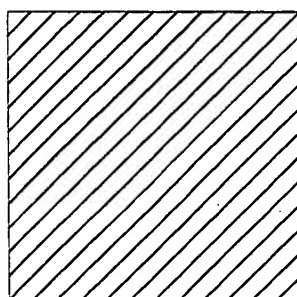


Figure 1b



Layer "n+1"

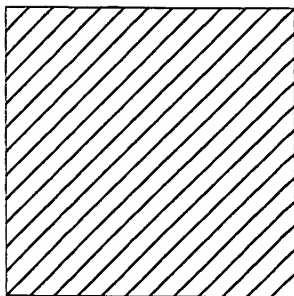
Octalinear (-45 Deg.)



Layer "n"

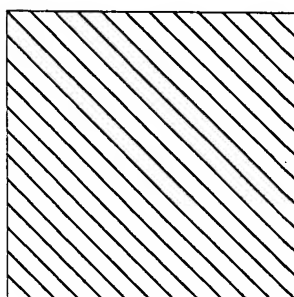
Octalinear (+45 Deg.)

Figure 2a



Layer "n+1"

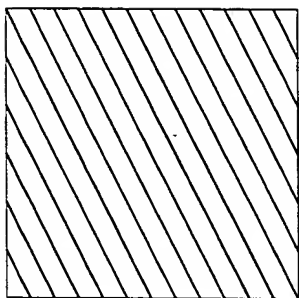
Octalinear (+45 Deg.)



Layer n

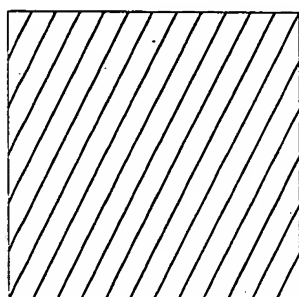
Octalinear (-45 Deg.)

Figure 2b



Layer "n+1"

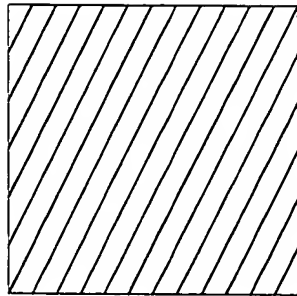
(-60 Degrees)



Layer "n"

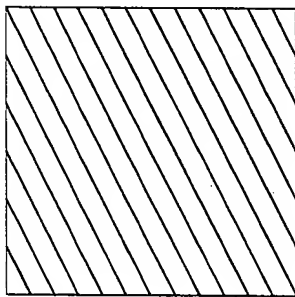
(+60 Degrees)

Figure 3a



Layer "n+1"

(+60 Degrees)



Layer "n"

(-60 Degrees)

Figure 3b

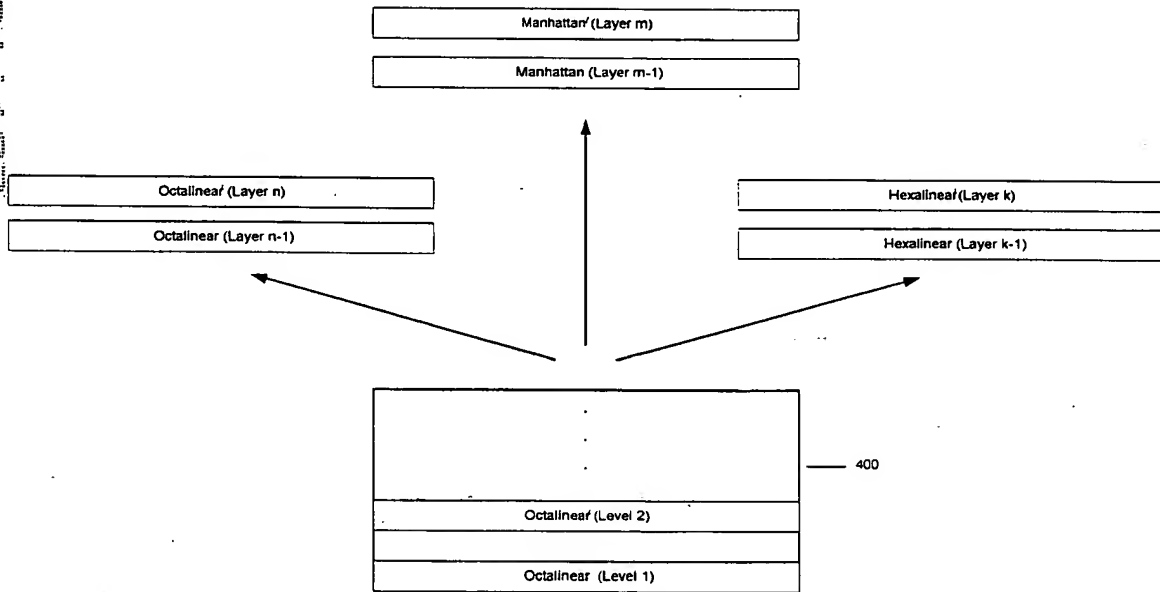


Figure 4a

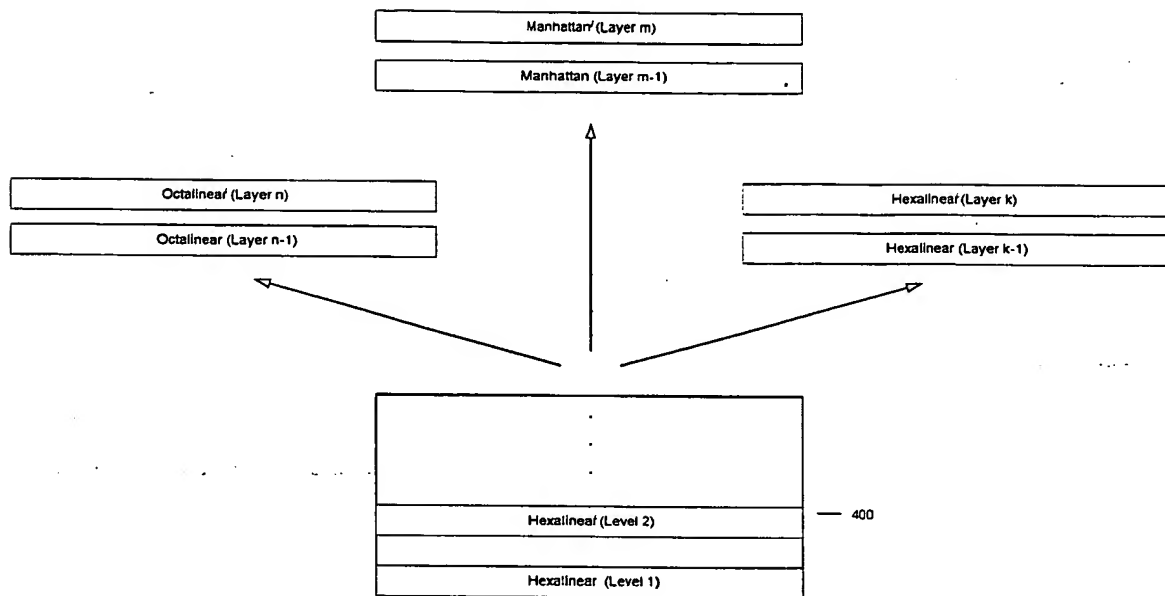


Figure 4b

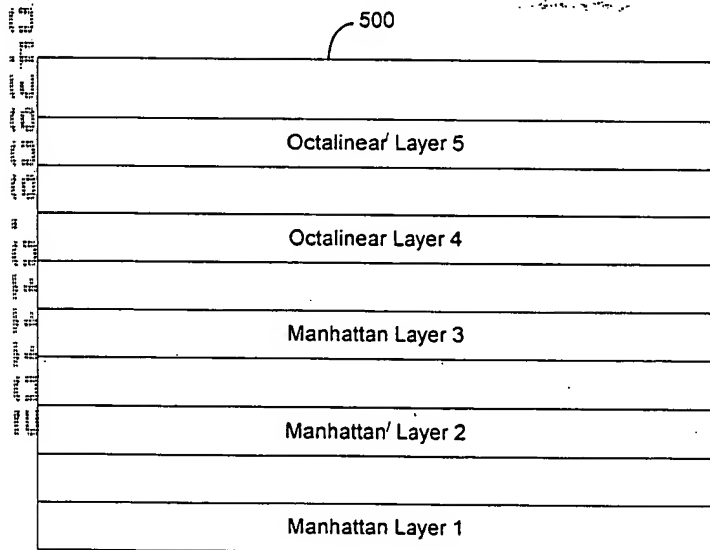


Figure 5a

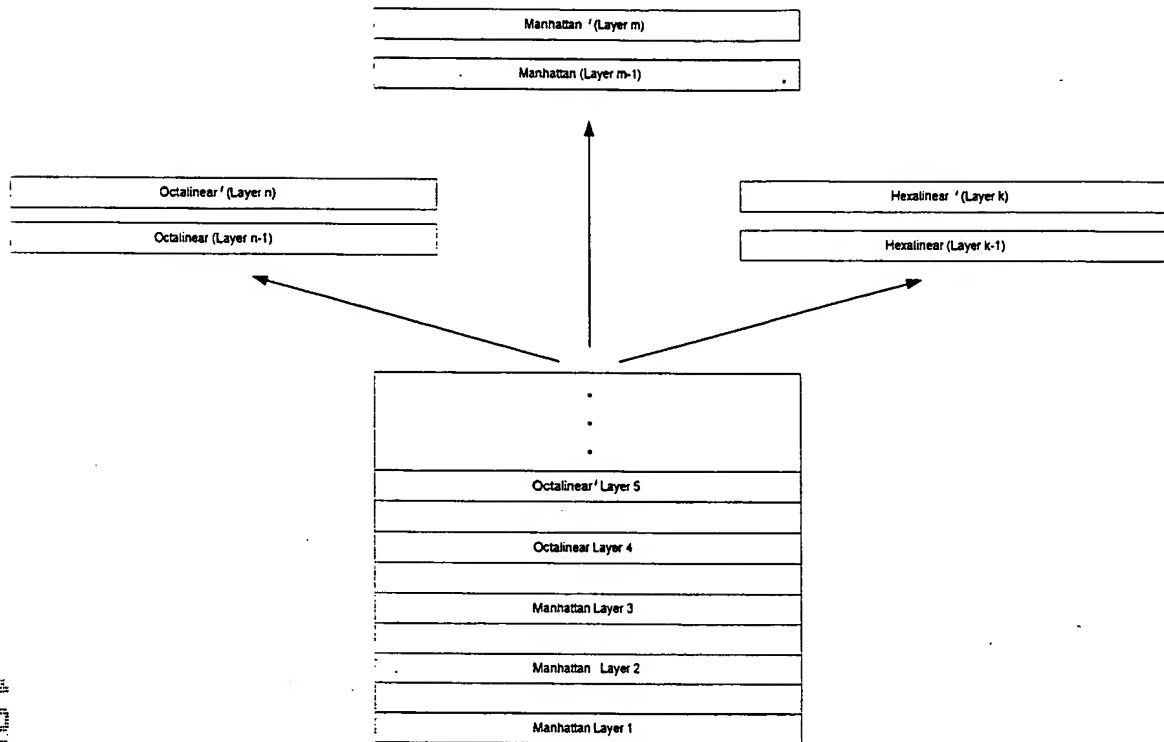
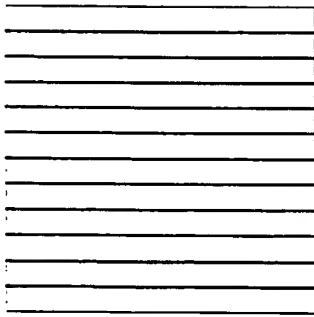
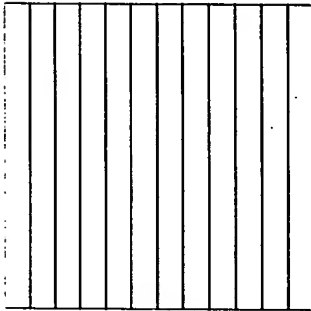


Figure 5b



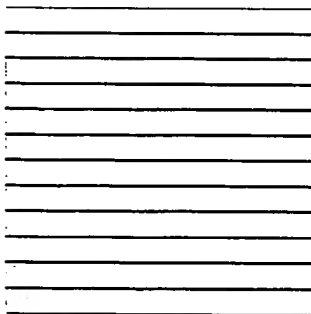
Layer 3

Horizontal



Layer 2

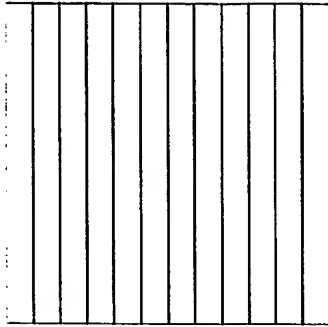
Vertical



Layer 1

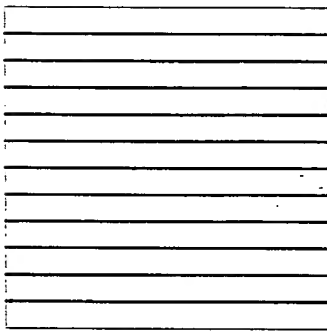
Horizontal

Figure 6a



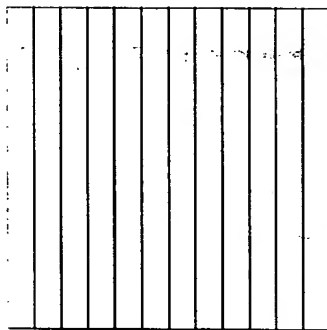
Layer 3

Vertical



Layer 2

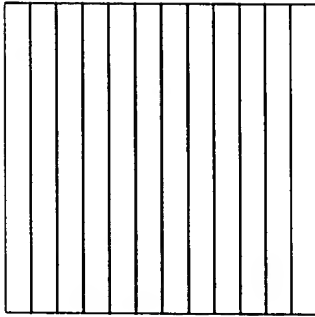
Horizontal



Layer 1

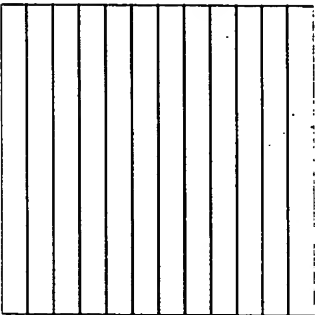
Vertical

Figure 6b



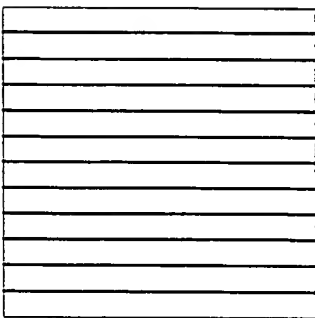
Layer 3

Vertical



Layer 2

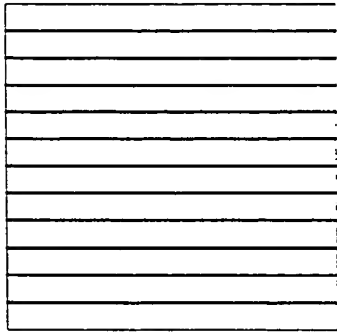
Vertical



Layer 1

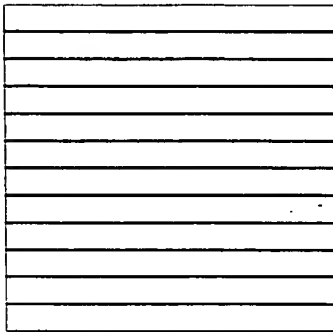
Horizontal

Figure 6c



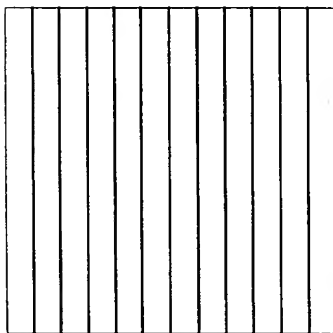
Layer 3

Horizontal



Layer 2

Horizontal



Layer 1

Vertical

Figure 6d

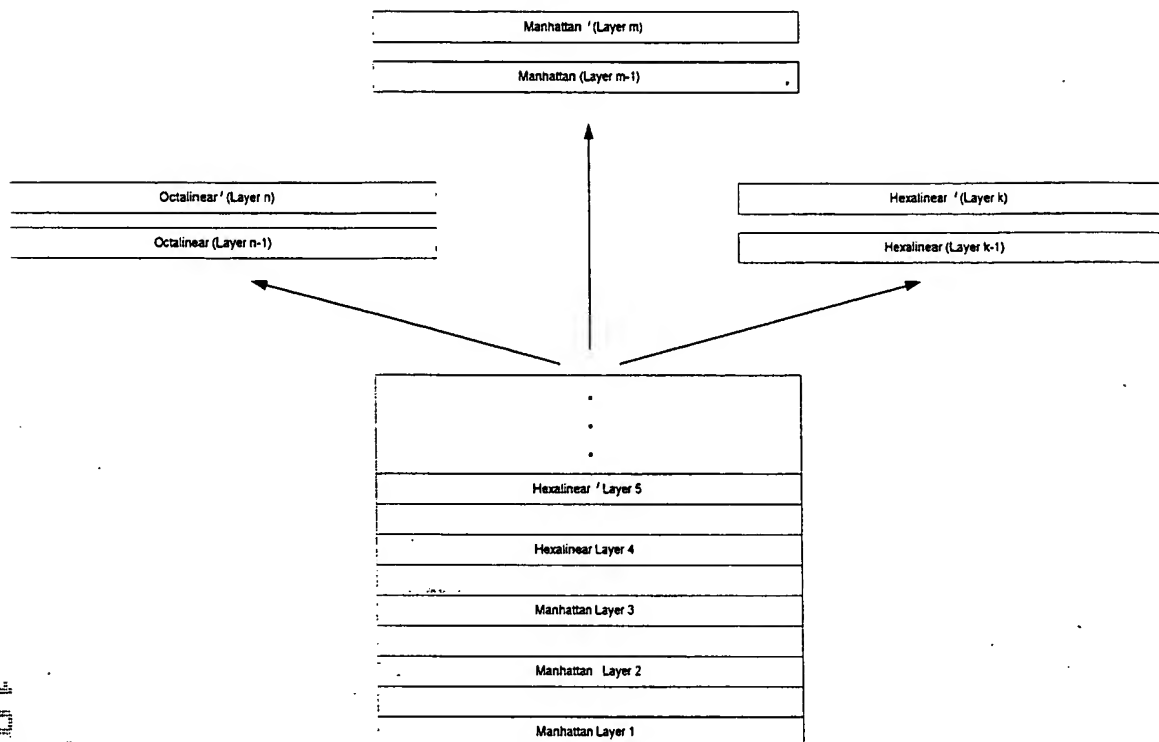


Figure 7

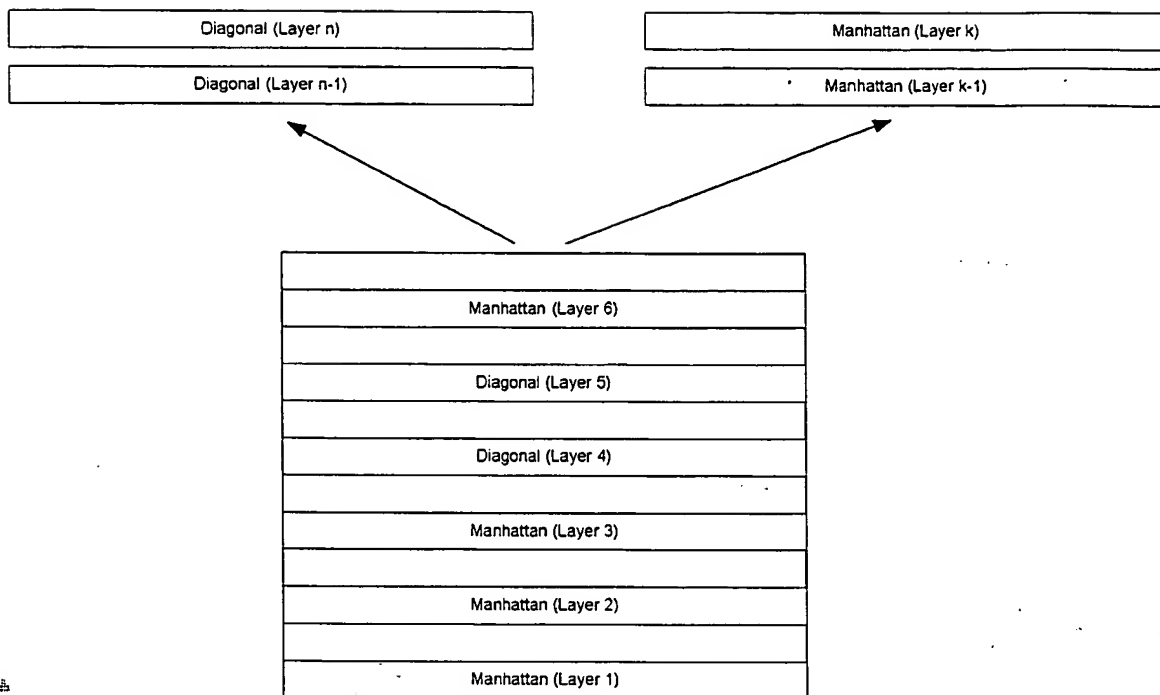


Figure 8

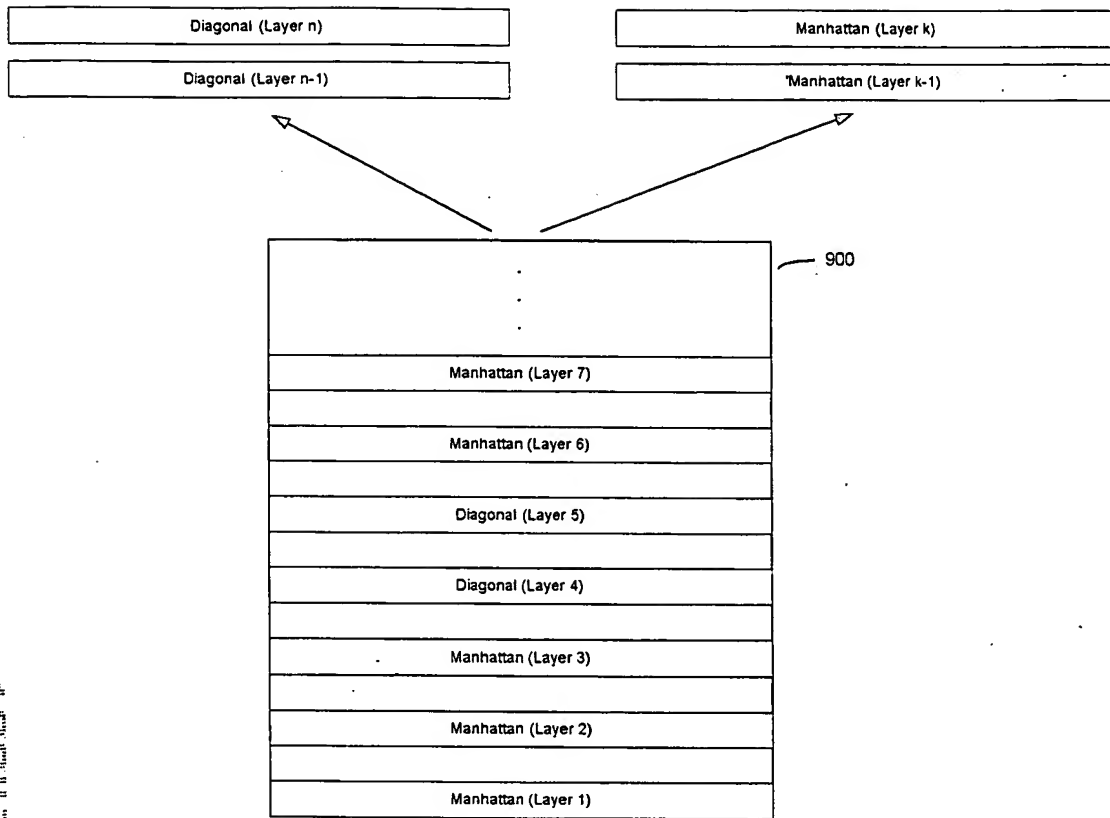


Figure 9

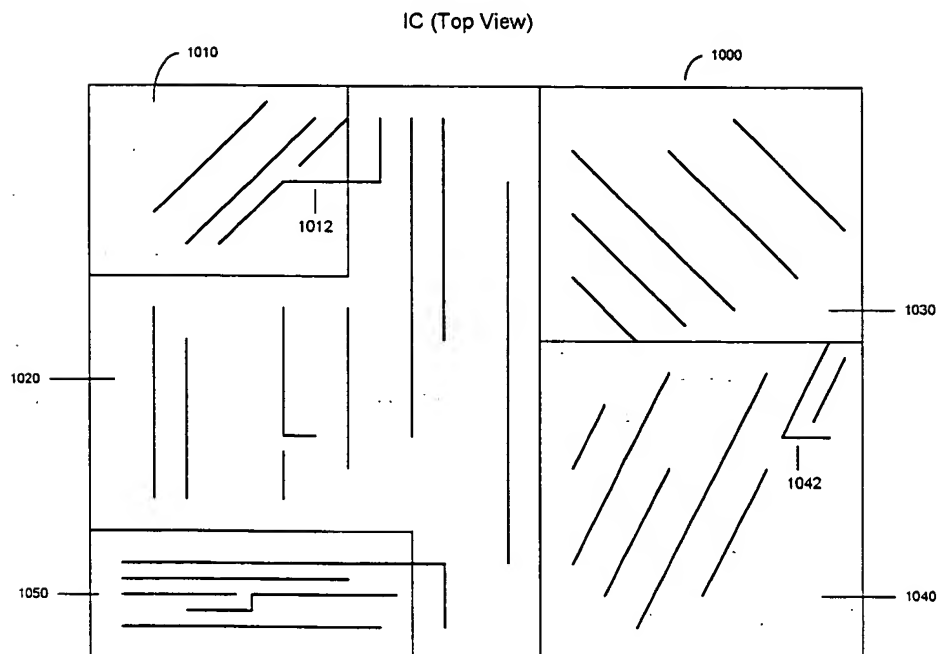


Figure 10

IC (Top View)

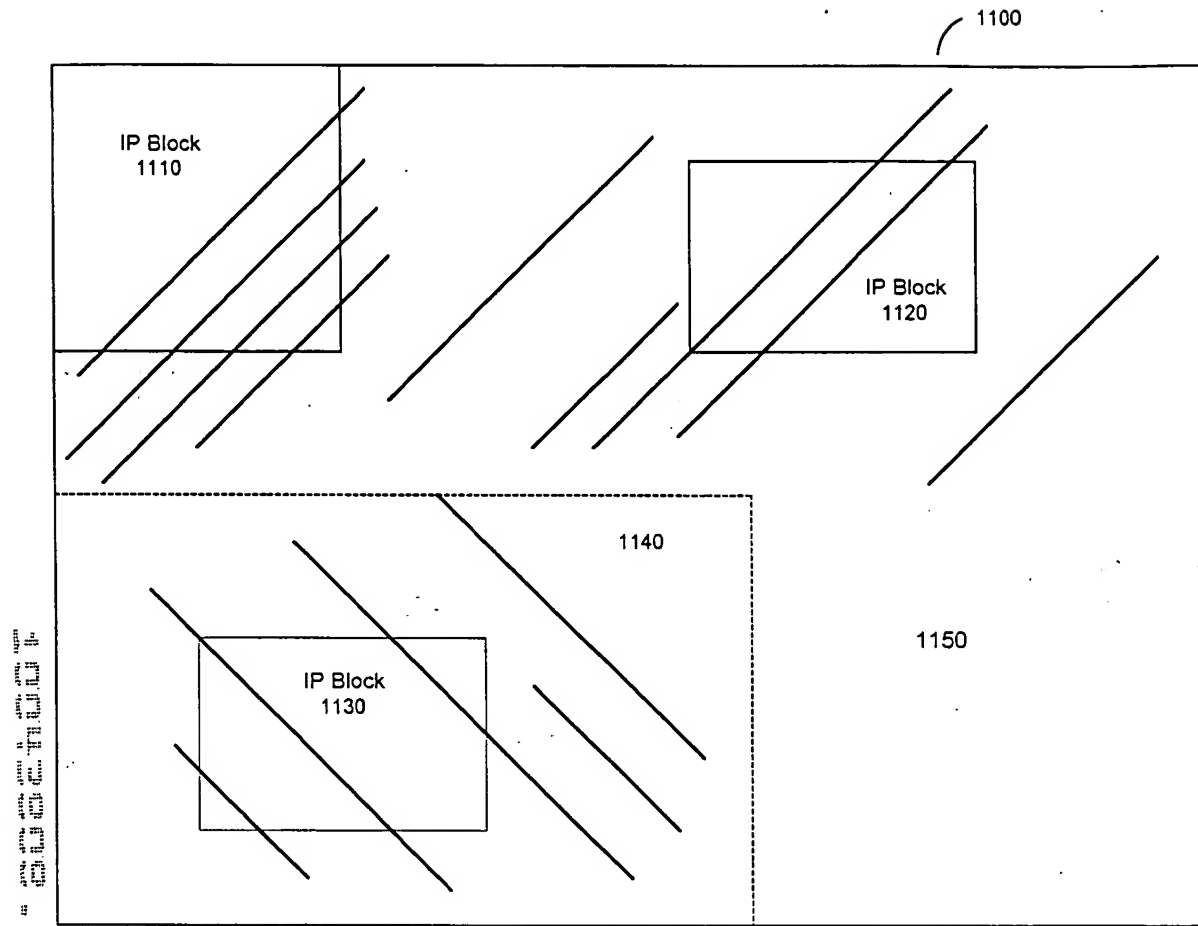


Figure 11

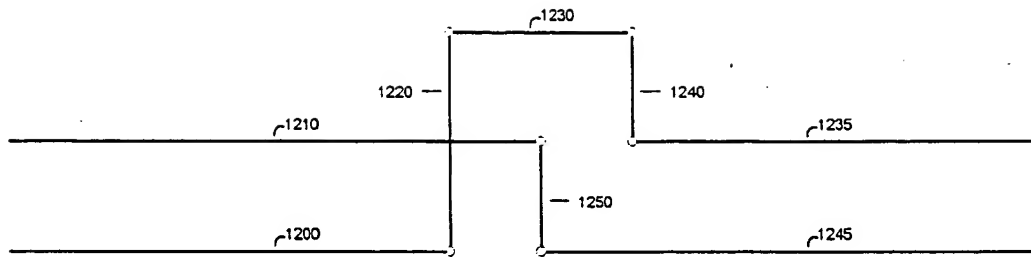


Figure 12a

Prior Art

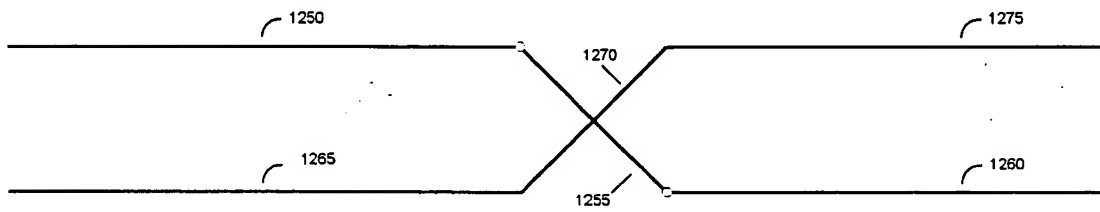


Figure 12b

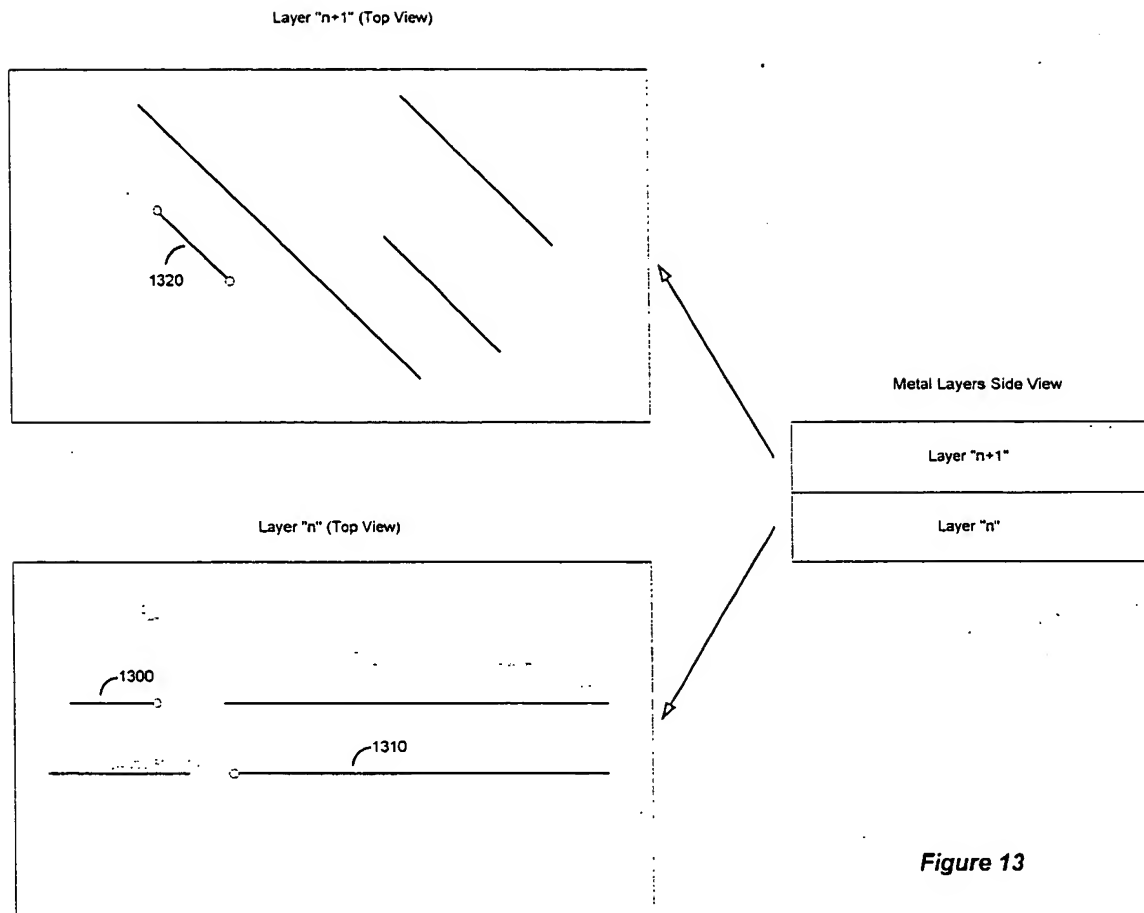
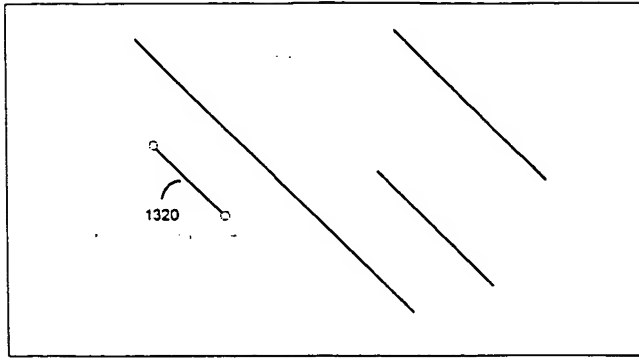
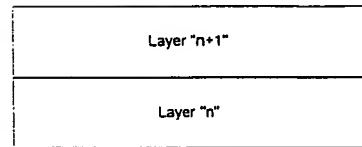


Figure 13

Layer "n+1" (Top View)



Metal Layers Side View



Layer "n" (Top View)

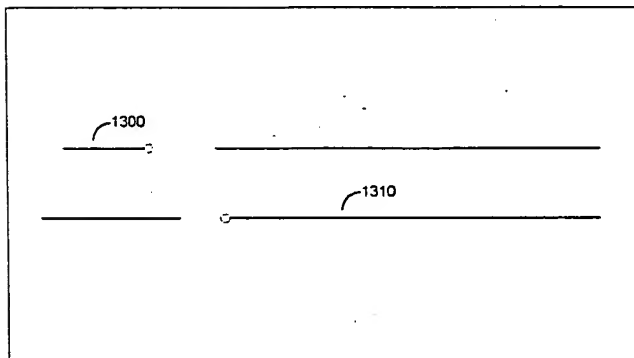


Figure 13

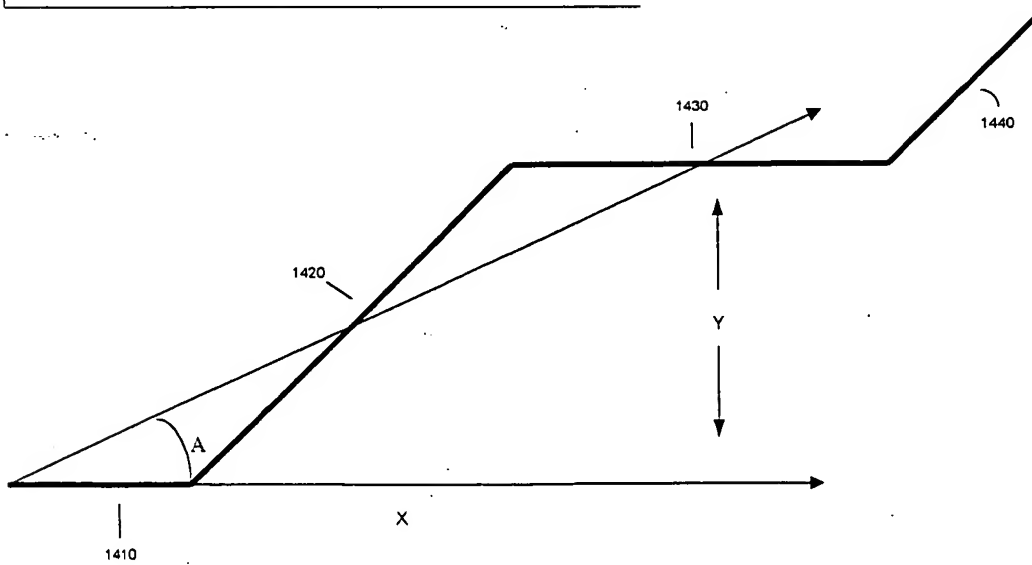


Figure 14

IC (Top View)

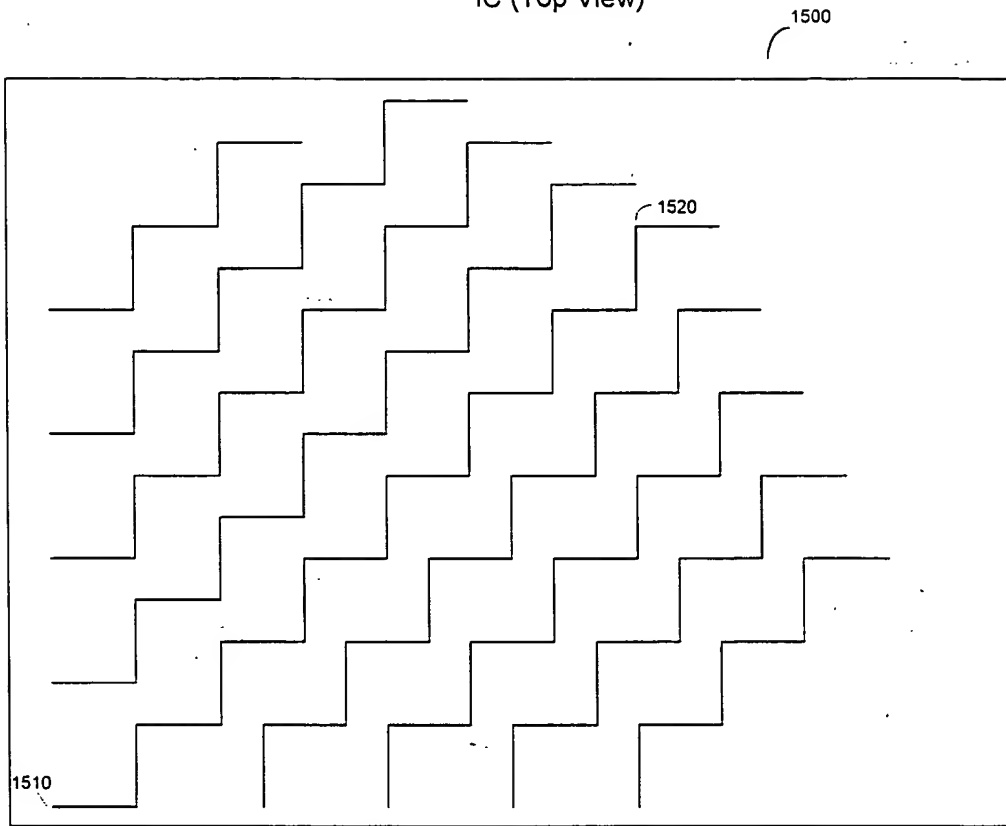


Figure 15

IC (Top View)

1600

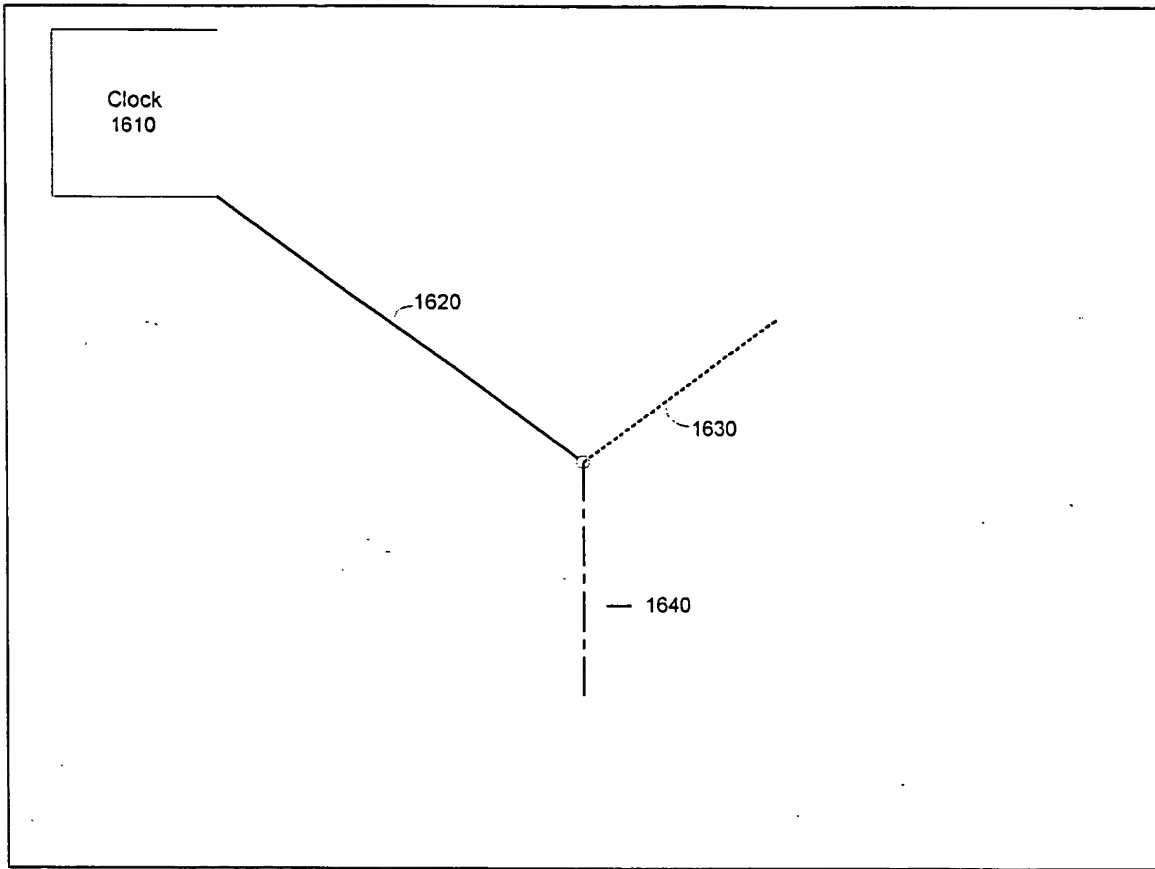


Figure 16